

ATTACHMENT J-6-A
STATEMENT OF WORK
FOR SPACE SHUTTLE SYSTEM INTEGRATION SUPPORT

1.0 The Contractor shall provide system technical studies and laboratory support. This support will include the necessary engineering skills, studies, materials, and equipment (except that to be provided by the Government) in performance of this effort.

This scope shall be accomplished by issuance of NASA directed tasks in accordance with the provisions of Clause G-5 - Technical Direction within the provisions of Paragraphs 2.0 and 3.0 of this Attachment.

2.0 Special Development Studies (SDS's)

2.1 SDS's are for (but not limited to) the following types of activities:

- (a) Material/Process Environmental Issues
- (b) Material/Process/Equipment Obsolescence Replacements
- (c) Resolving Unforeseen Anomalies related to the required operations and design of the External Tank (ET).
- (d) Development Studies
 - Preliminary design
 - Development testing
 - Test Specimen fabrication
- (e) Analyses
 - Process development
- (f) Preliminary Groundwork for an Engineering Change Proposal (ECP)

2.1.1 The above shall be accomplished by issuance of Technical Direction for a SDS activity by the External Tank (ET) Project Manager or Contracting Officer within the general scope of the basic contract and mutually agreed to by the Contractor.

2.1.2 Effective September 27, 2002 through the period of performance of the ET Production contract, hours will be included in the contract for labor and non-labor (identified in Paragraph 2.4 below) to perform the mutually agreed to activities.

2.2 Work to be performed under paragraph 2.0 will be within the broad parameters listed above. SDS's shall be pre-coordinated between the Contractor and the ET Project Manager or Contracting Officer to definitize the study plan and the estimated hours required to accomplish the approved studies. Each study will contain the scope of work, period of performance desired, and such other instructions as may be necessary to properly define the desired effort.

2.3 The Contractor shall promptly commence work upon receipt and acknowledgment of a properly executed SDS by the ET Project Manager or the Contracting Officer and the Contractor. The Contractor shall accumulate and maintain records on a study by study basis of all expenses incurred (DR MMC-ET-MA83). Upon completion of the Fiscal Year and upon completion of each study, the Contractor shall calculate the hours expended in performance of the study. The Conversion Rate by Fiscal Year identified in paragraph 2.4 below shall be used for converting direct non-labor cost to hours.

2.4 SDS Man-hours

2.4.1 The contractor is authorized the following equivalent man-hours for performance of the SDS activity.

2.4.2 For purposes of determining remaining hours, the following current year factor and conversion rate shall be used.

2.4.3 The parties hereby agree that the Contracting Officer may, by written order, increase the total number of hours listed in the table below by issuing a Supplemental Agreement. The Target Cost identified in Clause B.2.a will be adjusted by the total number of hours to be added times the conversion rate and appropriate fee adjustments will be made accordingly.

2.4.4

(b)(4)

2.5 At the end of this contract, the Contractor will submit a proposal to the Contracting Officer for an adjustment to this contract for the total number of unused hours determined as identified in DR MMC-ET-MA83. The Target Cost adjustment shall be calculated by multiplying the unused hours by the conversion rate for the final fiscal year. Fee will be decreased consistent with the amounts established by the modification that incorporated the SDS hours into the contract.

3.0 Technical Directives (TD's)

3.1 Technical Directives are for (but not limited to) the following types of activities:

- (a) Support to agency initiatives for the coordination/management of test planning, analyses, evaluation and preparation/conduct of ground test systems.
- (b) Perform Technical Studies in support of the ET Project Office.

3.1.1 The above shall be accomplished by issuance of Technical Direction for a TD activity by the ET Project Manager or Contracting Officer within the general scope of the basic contract and mutually agreed to by the Contractor.

3.1.2 Effective September 27, 2002 through the period of performance of the External Tank Production contract, hours will be included in the contract for labor and non-labor (identified in Paragraph 3.4 below) to perform the mutually agreed to activities.

3.2 Work to be performed under paragraph 3.0 will be within the broad parameter listed above. TD's shall be pre-coordinated between the Contractor and the ET Project Manager or Contracting Officer to definitize the study plan and the estimated hours required to accomplish the approved studies. Each study will contain the scope of work, period of performance desired, and such other instructions as may be necessary to properly define the desired effort.

3.3 The Contractor shall promptly commence work upon receipt and acknowledgement of a properly executed TD by the ET Project Manager or Contracting Officer and the Contractor. The Contractor shall accumulate and maintain records on a study-by-study basis of all expenses incurred (DR MMC-ET-MA83). Upon completion of the Fiscal Year or upon completion of each study, the Contractor shall calculate the hours expended in performance of the Study. The Conversion Rate by Fiscal Year identified in Paragraph 3.4 below shall be used for converting direct non-labor cost to hours.

3.4 TD Man-hours

3.4.1 The Contractor is authorized the following equivalent man-hours for performance of the TD activity.

3.4.2 For purposes of determining remaining hours, the following current year factor and conversion rate shall be used.

3.4.3 The parties hereby agree that the Contracting Officer may, by written order, increase the total number of hours listed in the table below by issuing a Supplemental Agreement. The Target Cost identified in Clause B.2.a will be adjusted by the total number of hours to be added times the conversion rate and appropriate fee adjustments will be made accordingly.

3.4.4

3.5 At the end of this contract, the Contractor will submit a proposal to the Contracting Officer for an adjustment to this contract for the total number of unused hours determined as identified in DR MMC-ET-MA83. The Target Cost adjustment shall be calculated by multiplying the unused hours by the conversion rate for the final fiscal year. Fee will be decreased consistent with the amounts established by the modification that incorporated the TD hours into the contract.

4.0 The Contractor shall submit on a quarterly basis, document MMC-ET-MA83 "ET Project-Special Studies Report" which will identify the direct hours authorized and used for each SDS and TD. This report is the basis for determining the number of direct hours expended by the Contractor for SDS's and TD's. It will be the basis for determining the number of hours remaining at the end of the contract for the purposes of adjusting the contract value for unused hours.

5.0 Once the maximum number of hours identified above for Technical Directives and Special Development Studies is reached and/or the contract period of performance is ended, the Contractor's requirements under this Attachment are fulfilled, even though the specific work may not have been completed. The Contractor will submit a contract value adjustment proposal for unused hours as identified in Paragraphs 2.5 and 3.5 above.

6.0 If at any time during the performance of this contract, the Contractor determines that the approved hours of effort to be furnished will exceed the number of hours specified in paragraphs 2.0 or 3.0, the Contractor will notify the Contracting Officer and furnish with such notification, a new estimate of hours, and the parties to this contract may enter into negotiations to provide the additional hours and the associated equitable adjustment in the cost and fee.

ATTACHMENT J-8-A

PROVISIONING PROCEDURE FOR EXTERNAL TANK SPARE PARTS

- A. The Contractor shall be responsible for recommending to NASA the spare parts required to adequately support the External Tank and its related equipment, the cost of which is not included in the estimated cost of this contract. These requirements will be submitted on a format acceptable to NASA in accordance with Logistics Program requirements shall include the total quantity, part number, description of item, quantity to be used at each site location, delivery schedule, consumption or failure rate and an estimated cost of each line item.
- B. A Release Notice signed by the Contracting Officer will be the authority for the Contractor to release the approved special tooling, support equipment and spare parts for manufacturing or procurement. Interim release authority may be implemented to authorize the Contractor to proceed to fill immediate requirements to prevent work stoppages and this shall be subsequently reflected in confirming documentation. For the purpose of this procedure, a Release Notice is defined as a letter signed by the Contracting Officer which approves, with any changes, the recommended spare parts.
- C. Work to be performed under this Attachment will be within the broad parameters listed herein and will be more specifically defined by means of an accountability report submitted semiannually. To distinguish spares provisioning accountability from other proposals, the itemized costs will be accounted for separately. This accountability is to reflect the total dollar value expended for the line item plus the labor associated with the hardware provided during the accounting period. The total effort contemplated for the task described herein is target cost in the amount of \$740,127.
- If at any time during the performance of this contract, the contractor has reason to believe that the Target Cost specified above will be exceeded, the contractor will notify the Contracting Officer and furnish with such notification, a new estimate and the parties to this contract may enter into negotiations to provide additional dollars for an equitable adjustment in the Target Cost and Fee applicable to this attachment.
- D. Failure to agree to any adjustment shall be a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes." However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.
- E. NASA may at any time, in the manner set forth in above, order additional items and/or delete items of spare parts on order by Release Notice signed by the Contracting Officer.
- F. All fabrication, inspection, checkout, acceptance test, and preparation for delivery requirements applicable to deliverable hardware shall also apply to the terms furnished hereunder.

APPENDIX I TO ATTACHMENT J-8-A

INCORPORATION OF RELEASE NOTICES

The contract has been equitably adjusted as a result of the Release Notices identified below to provision the hardware listed in the documents identified herein.

Release
Notice

Provisioning
Documentation

Supplemental
Agreement

ATTACHMENT J-9-A
EXTERNAL TANK LAUNCH SUPPORT SERVICES (KSC)

1.0 PURPOSE

1.1 The purpose of this Attachment is to define the activities for the External Tank Launch Support Services (LSS) that are required to provide the MAF ET Development Contractor expertise to the Government and the Space Flight Operations Contractor (SFOC) at the Shuttle Launch Site (John F. Kennedy Space Center, Florida). Personnel assigned to this task in conjunction with NASA/MSFC on site personnel will form an integrated team with ET design authority.

2.0 DEFINITIONS

ET LSS Contractor - Lockheed Martin Corporation (i.e. Lockheed Martin Space Systems Company – Michoud Operations) - Personnel satisfying requirements and accomplishing launch support tasks at KSC as specified below:

ET MAF Development Contractor - Lockheed Martin Corporation (i.e. Lockheed Martin Space Systems Company – Michoud Operations) - Personnel located at MAF

MSFC - Marshall Space Flight Center - ET Development Center, the National Aeronautics and Space Administration (NASA), George C. Marshall Space Flight Center.

Launch Site Government Representatives - Individuals assigned to the NASA/KSC Space Shuttle Launch Site Management Organizations.

MSFC Resident Office (RO) Representatives - MSFC Government ET Project Representatives permanently stationed at the KSC launch site to provide Development Center/Project authority to the launch site.

3.0 WORK TASKS

ET LSS Contractor personnel shall furnish the necessary services, engineering skills, materials, and equipment (except that provided by the Government) in support of the Operations Phase of the Shuttle Transportation System. Work to be performed will be in general accordance with the following:

3.1 Operations Support

3.1.1 Work-Site Support - Support and monitor ET Receiving/Inspection and other critical/selected processing activities.

3.1.2 Design Liaison - Provide on-site interpretation of design and test requirements for the ET and support equipment developed by the ET MAF Development Contractor. Coordinate information and exchange of data between ET MAF Development Contractor and launch site organizations.

3.1.3 Photographic Documentation - Coordinate on-site real-time photo documentation for ET configuration details, ET anomalies for recurrence control reporting and solution purposes, and for Material Review Board (MRB) engineering review and disposition.

3.1.4 Test Support - Coordinate requests between ET LSS Contractor and the SFOC for ET MAF Development Contractor monitoring or participation in SFOC tests, and SFOC monitoring or participation in ET MAF Development Contractor tests.

3.1.5 Readiness Reviews - Support the Government and the SFOC in preparations for readiness status at launch site readiness reviews. Coordinate with the SFOC in preparation of presentations for MSFC readiness reviews. In general, this coordination will consist of obtaining data on ET processing, including planned/unplanned work and modification status, launch site anomalies, field changes, launch site deviations/waivers and open issues. Provide for timely ET Contractor launch site support of readiness statements and the Certificate of Flight Readiness (COFR) activities.

3.1.6 Spares Provisioning - Coordinate between ET MAF Development Contractor, MSFC and the SFOC on requirements for spares and materials to be shipped from the ET production facility or vendors, and disposition of removed items or items which require retest and other rework (e.g., time/life refurbishment). Coordinate transmittal of spares usage data, purchase requisition requests, and recommendations from the SFOC to ET MAF Development Contractor. Coordinate with ET MAF Development Contractor to expedite shipment of spares and materials as needed by the SFOC.

3.1.7 Planning - Coordinate between the ET MAF Development Contractor, MSFC and the SFOC on ET related support equipment and modification kit delivery schedules, configuration, condition, and potential or pending changes.

3.1.8 Technical Operating Procedures (TOPs) - Review and approve, prior to implementation, ET TOPs that change External Tank requirements or configuration which include OMIs, ICRs/deviations, IPR/Problem Reports, Test Preparation Sheets, and changes thereto. ET related Application Software change packages will be reviewed for compatibility with ET MAF Development Contractor design and test requirements, and to identify incompatibilities, inaccuracies, inadequacies, and recommended alternatives. The change packages will have an LSS concurrence signature prior to submittal to the KSC Technical Review Panel.

3.1.9 Launch Site Recommended Changes - Coordinate between the SFOC and ET MAF Development Contractor on launch site recommended mandatory and improvement changes to the ET related support equipment and modification kits.

3.1.10 Launch Support - Monitor, in the Launch Control Center Engineering Support Area, propellant loading and ET related pre-launch activities and provide technical assistance as requested by the Launch Site Government Representatives or the SFOC.

3.1.11 Transportation Equipment - Provide on-site system expertise on ET Contractor Rotational Support Equipment. Coordinate operational problems between ET MAF Development Contractor and the SFOC.

3.1.12 Bar Coding - The Contractor will maintain bar coding of logistics spares, ship loose hardware, mod-kit hardware, and consumable materials shipped to KSC.

3.2 Anomalies

3.2.1 In-Flight - Provide technical assistance to the launch site Government representatives and the SFOC in understanding MSFC/ET Contractor proposed resolution of in-flight anomalies.

3.2.2 Failure Analysis - Provide technical support to the SFOC for anomaly resolution, failure analysis and corrective action. With concurrence of ET MAF Development Contractor and MSFC-Resident Office (RO), failure analysis may be performed on-site (KSC), at the ET MAF Development Contractor Facility, the vendor facility or at a facility other than the facility of the vendor who supplied the item.

3.2.3 Disposition of Discrepant Hardware - Upon notification by the SFOC, support the SFOC in determining the disposition of selected ET and associated support equipment/software and facility system PR discrepancies.

3.2.4 Recurrence Control (Corrective Action) - Assist the SFOC in determining the need for, and coordinate transmittal of Corrective Action Assistance Requests to the ET MAF Development Contractor and MSFC. All requests for recurrence control action at ET MAF Development Contractor will be reviewed by the ET LSS Contractor.

3.2.5 Unexplained Anomalies - Coordinate between the SFOC/Launch Site Government Representative and ET MAF Development Contractor to attain agreement on the existence and acceptability or rejection of unexplained anomalies. ET LSS Contractor shall approve the final disposition of the unexplained anomalies and provide concurrence for closeout rationale.

3.2.6 Launch Site Deviation/Waivers and Material Reviews - Coordinate between the SFOC, ET MAF Development Contractor and MSFC actions relating to deviations, waivers and material reviews for out-of-specification or drawing non-conformance conditions. ET LSS contractor shall approve, as well as coordinate, MSFC approval on launch site waivers and material review actions. LSS is a member of the Material Review Board (MRB) and when applicable, the Prime Material Review Board (PMRB).

3.3 Configuration Management

3.3.1 Operation and Maintenance Requirements Specification Document (OMRSD), Requirements Change Notices (RCNs) and Launch Commit Criteria (LCC) - Provide interpretation of requirements and intent of the basic OMRSD, LCC and changes thereto. Participate in RCN/LCC reviews and support the Government with technical comments for OMRSD/LCC changes.

3.3.2 Change Boards - Review change requests and hardware/software change packages. Participate in Level II and Launch Site Level III Change Board

activities. Review SFOC modification list for all ET MAF Development Contractor end items.

3.3.3 End Item Acceptance - Provide ET MAF Development Contractor information on hardware/software end item turnover which will include as a minimum, identification of changes to planned work, open (incomplete production) work, configuration changes from prior deliveries and unique requirements. Coordinate requirements for SFOC and MSFC RO participation in end item acceptance pre-ship coordination reviews (PSCR).

3.4 Modifications Kits

3.4.1 Flight Hardware Mod Kits - Review and approve SFOC Test Compliance Technical Instruction (TCTI) implementation paper, review closure data from SFOC and provide to ET MAF Development Contractor.

3.4.2 Support equipment and Facilities - Review proposed launch site support equipment, facilities, and ET related software changes for possible effect on the ET and ET support equipment. Coordinate results of this review with ET MAF Development Contractor. Participate in launch site change boards and provide the ET Contractor assessment of proposed launch site equipment and facility changes.

3.4.3 Design Reviews - Participate in ET related launch site support equipment and facility design reviews, identifying apparent discrepancies and recommending changes.

3.4.4 Field Changes - Evaluate field change requests to the ET and modification kits as requested by the SFOC. Prepare a Field Engineering Change (FEC) where time is critical and coordinate with ET MAF Development Contractor, MSFC Resident Office (RO) and Launch Site Government representative for approvals. If time permits, coordinate and request an Expedited Mod Kit (EMK) from ET MAF Development Contractor, instead of the FEC.

3.5 Interfaces

3.5.1 Formal - Establish and maintain formal interfaces with MSFC Resident Offices and Launch Site Government Representatives. All requests from ET MAF Development Contractor that require an SFOC response will be formal and shall be provided to the MSFC Resident Office and the cognizant Launch Site Government Representative. The ET LSS Contractor will establish and maintain a tracking system for actions requested from both ET MAF Development Contractor and the SFOC.

3.5.2 Informal - Establish and maintain informal interfaces with the SFOC through day-to-day contact and monitoring and participation in interfaces will be used to ensure SFOC understanding of ET design and test requirements, and ET MAF Development Contractor ability to support readiness reviews.

3.5.2.1 Support for Special Launch Site Needs - Coordinate with the SFOC and ET MAF Development Contractor to obtain support for special launch site needs. These needs may include engineering, technical, scientific, or management systems personnel; resources test or scientific equipment and facility resources, factory tools, materials and shop aids.

3.5.2.2 Maintain access to ET MAF Development Contractor data relating to planning, engineering, logistics, reliability, quality, safety, design and modifications.

3.6 Training and Certification at KSC

3.6.1 Training Plan - Prepare and implement a training plan for certification, re-certification and stand-boarding of ET LSS Contractor personnel.

ATTACHMENT J-10-A

EXTERNAL TANK FLIGHT OPERATIONS

1.0 The External Tank Flight Operations support effort is designed to provide Contractor technical/logistics capability for flight unique/mission specific activities (SFOC Processing Unique) involved in launch preparation/support areas such as MSFC HOSC, Mission Support Room, OMRSD/LCC/OMI Reviews and Flight Evaluations.

2.0 The Contractor shall furnish the necessary engineering skills, labor, materials and equipment (except that specified to be provided by the Government) to perform the following requirements/tasks:

2.1 Support to Launch Site Flight Operations

2.1.1 The Contractor will provide MAF and on-site MSFC support to the MSFC ET Project and to the Lockheed Martin Launch Support Services (LSS) team on-site at Kennedy Space Center (KSC). The MAF effort required to support the LSS and the Space Flight Operations Contractor (SFOC) site interface covers KSC flight unique operations.

2.1.2 The Contractor shall provide launch site flight unique engineering reliability support to ET operational use with reliability analyses, trade studies, statistical analyses and failure rate determinations.

2.2 Flight Evaluation

The Contractor shall provide Engineering technical capability to support flight performance assessments as required to support Shuttle Systems Integration and Mission Success. Specific support requirements/activities encompassed by this task are as follows:

2.2.1 Support flight evaluations with analysis and provide input to the report of demonstrated performance on each flight.

2.2.2 Support via telecon, the MSFC ET Contractor FEG Quick Look and Final Evaluation Meetings and provide graphical data and text input as requested for the MSFC ET Contractor FEG STS Final Report for each STS Mission.

2.2.3 Prepare and submit to the ET Project Office an ET MAF Contractor STS Engineering Evaluation Final Report for each flight in accordance with established report format.

2.2.4 Evaluate and document flight problems or anomalies as defined in Paragraph 7.3 of the operational Space Shuttle Evaluation Plan if required for each STS Mission. This activity includes support to the MSFC Problem Assessment System (PAS) for flight hardware malfunctions requiring corrective action (this is based on a maximum of one CAPs per flight).

2.2.5 Appropriate anomaly investigations will be performed by the Contractor. Anomalies to be evaluated will be limited to the period from countdown (T-1 day) through ET breakup as reported by the Flight Evaluation Working Group

2.2.6 The Contract will be equitably adjusted for any internal/external ET Contractor Assessment activities resultant from the lessons learned from a major anomaly investigation.

ATTACHMENT J-11-A

TECHNOLOGY UTILIZATION/TRANSFER PROGRAM

Scope:

1.0 Pursuant to the provisions of Article H-31 of this contract, the Contractor shall provide for utilization and transfer of External Tank Technology developed under this contract (hereinafter "ET Technology") into the academia, public, and private entities. This program is designed to allow the Contractor to transfer and to provide consulting, design and development expertise for implementation of ET Technology, for public, private and governmental benefits.

1.1 All effort funded under this attachment will be authorized by Task Orders approved by the Contractor and the ET Project Manager. Each Task Order will be incorporated into the contract as identified below:

Task 001 - Administration of Technology Utilization/Transfer (as executed in the NAS8-36200 Contract, SA140 dated June 6, 1991, Lockheed Martin Reference 91MI-0571)

2.0 The initial task order shall describe in detail the scope of this effort, but in general the Contractor shall actively pursue the transfer of ET Technology by interacting with academia, public, and private entities. This interaction may include licensing.

3.0 NASA and the Contractor recognize and agree that it may be desirable from time to time to foster collaborative research at the NASA Michoud Assembly Facility (MAF) or for the Contractor to enter into joint ventures with third parties as means of implementing NASA's policy to effectively transfer ET Technology into the commercial market place. Where it is proposed to perform collaborative research at MAF or enter into joint ventures with third parties involving ET Technology, each agreement shall be negotiated on an individual basis, ensuring avoidance of any conflict of interest situation. The Contractor shall submit all collaborative research agreements or joint ventures, involving work at MAF to the Contracting Officer for approval, prior to finalization. This approval shall be detailed in a written task order. Explicit in such Contracting Officer approval, is authority to use all MAF services such as, but not limited to, lab space, computer time, consumables and reproduction equipment.

4.0 Ownership of rights to technology developed under the agreements described in paragraph 3.0 above shall depend upon the source of funding for such and shall be specified in the individually negotiated agreements. In general, if the technology is developed by the Contractor with non-contract funds, the Contractor shall own the rights. If the technology is developed with funding from a third party, ownership of the rights shall be as determined between the Contractor and the third party. If the technology is developed with NASA contract funding, ownership to the rights shall be determined by the appropriate FAR or NFS clauses. NASA acknowledges that patent and other Intellectual Property rights are fundamental to the

success of this program. As such, NASA agrees to use its best efforts to support this program by transferring commercial rights in NASA Owned Intellectual Property consistent with licensing, waiver and other regulations, laws, presidential directives, etc. governing the transfer of the Intellectual Property. The reasonable and allowable costs incurred by the Contractor, in performing collaborative research agreements and joint ventures shall be allowable costs hereunder in accordance with the provisions of the Contract Clause 52.216-7 entitled, "Allowable Costs and Payment".

5.0 The total effort contemplated for these tasks authorized under this attachment is 9,928 total direct man-hours. For reporting against the total direct man-hours, one hour equates to \$60.53, which includes non-labor direct cost and applicable burdens.

5.1 Once the maximum number of direct man-hours for this program is reached and contract term has ended, the Contractor's requirements under the contract are fulfilled, even though the specified work may not have been completed. Nothing herein shall restrict the Contractor's expenditure of its own or non-direct funds to accomplish the purposes herein or similar purposes.

6.0 Licensing fees and other royalty revenues received by the Contractor from licenses of ET Technology shall be utilized to provide reimbursement to the contract until Government cost of \$600,972 has been offset. This reimbursement shall be in the form of credit billings to the contract on a semi-annual basis or more frequently if directed by the Government but not more frequently than monthly. The Contractor shall retain licensing fees, other royalties and revenues in excess of \$600,972.

7.0 If at any time during the performance of this contract, the Contractor has reason to believe that the equivalent man-hours of effort to be furnished will exceed the number of hours specified, the Contractor will notify the Contracting Officer and furnish with such notification, a new estimate of equivalent man-hours, and the parties to this contract may enter into negotiations to provide additional hours and for an equitable adjustment in the estimated cost and fee applicable to this Attachment.

ATTACHMENT J-12-A

POST DD-250 REQUIREMENTS FOR EXTERNAL TANKS
MANUFACTURED UNDER CONTRACT NAS8-36200

1.0 The Contractor will perform the activities below in support of External Tanks that were manufactured and delivered (DD-250) under Contract NAS8-36200 and remain unflown as of September 30, 2002:

1.1 The Contractor shall provide staging for the post-acceptance External Tanks and their ship-loose hardware and Acceptance Data Packages at MAF, providing security services and required monitoring until shipment (based on Section F, Clause F.5) to the designated delivery site. The Contractor is authorized to process post-DD250 Non-Conformance Documents. These post-acceptance end items will be treated as "Government Property" pursuant to all provisions of the "Government Property Clause".

1.2 The Contractor will provide the transportation services required to transport External Tanks, their major subassemblies, and STE/TSE from the point of Final Assembly to the point of barge embarkation and loading, to include that effort required to load, tie down, and secure the hardware on marine vessels as identified in Attachment J-1-A, Paragraph 8.3.

1.3 Spares for support of the Flight Program shall be provisioned by NASA in accordance with Attachment J-8-A, "Provisioning Procedures for External Tank Spare Parts".

1.4 This Contract does not include any effort for modification, rework/other activities not specified above (paragraphs 1.1 through 1.3) associated with External Tanks at the MAF, and External Tanks at KSC, produced under Contract NAS8-36200. Any such effort will be the subject of separate contractual action and equitable adjustment.

ATTACHMENT J-1-B (1)
STATEMENT OF WORK
FOR THE MICHLOUD ASSEMBLY FACILITY
OPERATIONS & MAINTENANCE -BASIC

1.0 REQUIREMENTS

This statement of work details the requirements for the performance of site operations and maintenance for the Michoud Assembly Facility (MAF), support to the MSFC Research and Development Center Initiatives, and Technical Directives. The subparts identifying these requirements are as follows:

- 1.1 The contractor will provide the necessary management, administration, engineering, supervision and craft labor as required to support the following functions: (1) Project Management; (2) Site Operations and Maintenance; and (3) Program Provisioning Tasks
- 1.2 Site Services define those functions to be provided to residents of the MAF to include NASA, NASA support agencies, NASA prime contractors and authorized subcontractors, and tenants. These services include provisioning for Site Transportation; Reproduction; Food Operations; Gift Shop Operations; Coordination of Telecommunication Requirements; Mail; Photography and Microfilming; Supplies; Utilities Interface for the Child Care Center; Janitorial; Roads and Grounds; Pest Control; Refuse Collection and Disposal; Personnel Relocations; Medical; and Security and Fire Protection.
- 1.3 Tenant Services are services provided to tenants operating at the MAF. These services are divided into two categories, i.e. Support Services and Supplemental Tenant Services. Support Services, which are in-scope to this contract, are defined as Occupancy Services, Custodial Services, Utility Services, Reproduction Services, Documentation Services and Photography Services. Supplemental Tenant Service Agreements are separate contractual agreements between the contractor and MAF tenants for services that may be provided by the contractor that are outside of the agreed to NASA/Tenant Support Agreement.

- 1.3.1. Support Services that the contractor will provide to tenants at the MAF are included in Support Agreements that are coordinated between NASA and the tenants pursuant to MAF Directive 8831.1. The contract shall be equitably adjusted based on the addition or deletion of tenants from the MAF or a change in the size of a given tenant's requirements.
 - 1.3.2. Supplemental Tenant Services are generally limited to such things as office machine repair, rearrangement and alteration, casual labor, medical, material handling and other services.
- 1.4 Site Operations and Maintenance responsibilities are set forth in detail in LMC-ET-MA91, the Facilities Operating Plan. This plan is incorporated in this contract by reference and is subject to its terms and conditions.
- 1.5 MSFC Operations Management includes on-site support and coordination for MSFC initiatives in the areas of propulsion, science research, materials, avionics, space environment, and payload utilization as well as ensuring compliance to on-site program requirements.
- 1.6 Support to MSFC Center of Excellence initiatives will be implemented on an as required basis upon receipt of Technical Directives approved by the NASA Project Office pursuant to Attachment J-6-B.
- 1.7 This Statement of Work (SOW) includes support common to the preceding contract that will be allocated based on the mutually acceptable methodology established in Attachment J-8-B.
- 1.8 The contractor shall provide procurement of materials and subcontracts as well as other miscellaneous costs required for accomplishing the efforts associated with MAF site operations and maintenance, as well as support to the MSFC Research and Development Center Initiatives. Specific equipment acquisition and installation by the contractor will be authorized by separate contractual action pursuant to Attachment J-1 of Contract NAS8-39243 (F), or its successor.
- 1.9 The Contractor shall provide the effort necessary to comply with NHPA requirements for Buildings 110 and 420 at the Michoud Assembly Facility as identified in Project Change Proposal B81594. In the event compliance results in the coordination of more than (7) projects with the State Historic Preservation Officer (SHPO) – including but not limited to Rearrangement & Alteration or Construction of Facilities projects – the Contractor shall submit a proposal and the contract will be equitably adjusted.

2. INDEX OF COMPLIANCE SPECIFICATION, DOCUMENTS AND DEVIATIONS

Listed below are the Type I documents applicable to this contract Statement of Work. Any references to these documents throughout this Statement of Work shall be deemed to be the issue date and/or revision set forth in this index. The documents identified herein are listed for configuration or requirements identification purposes only. Modifications to the items procured herein will be enabled pursuant to the clause of this contract entitled "Changes -- Cost Reimbursement -- Alternate V".

2.1 Contractor Documents*

<u>Document Number</u>	<u>Title and Date</u>
MMC-ET-MA91	Facilities Operating Plan, dated September 27, 1999
MMC-RA12-B	Contamination Control Plan, dated May, 1986, through DCN 019.

*NOTE: Subsequent applicable Document Change Notices (DCNs) shall be listed in the appropriate Documentation Change Log, incorporated herein by reference.

2.2 Requirements Documents - The NASA Requirements Documents listed below are identified for reference only. The contractor's implementation of these Requirements Documents, as well as, NASA authorized deviations and exceptions thereto are contained in the Type I documents identified in the above paragraph 2.1 of this contract.

<u>Document Number</u>	<u>Title and Date</u>
DPD 660	Space Shuttle External Tank Information Requirements Document (IRD)
NMI 8621.1G	NASA Mishap Reporting and Investigating Policy
MPG 1700.1	MSFC Industrial Safety Procedures and Guidelines

3. PROJECT MANAGEMENT

The Contractor shall perform site operations and maintenance of the Michoud Assembly Facility (MAF) as well as provide the labor required to administer and manage Contract NAS8-39243(F) and its successors contracts. This responsibility includes the performance of those activities, which are required for the continued operation of the MAF at a basic level of efficiency, safety, and sanitation except for normal deterioration expected for fair wear and tear.

The contractor shall perform project management activities to include Performance Management and Administration, Information Systems, and Procurement Management, Safety, Reliability and Quality Assurance Management, and MSFC Operations Management as follows:

3.1 Performance Management and Administration

- 3.1.1. The contractor will provide an Earned Value Management system traceable to the Work Breakdown Structure. To support this system, the contractor will provide integrated planning, scheduling, budgeting, work authorization, and cost accumulation activities.
- 3.1.2. The contractor will develop the necessary management controls ensuring the successful performance of the MAF operations. These controls will address such things as systems audits, computer services support, administration of manpower, and training of personnel.
- 3.1.3. The contractor will develop program performance measurement criteria, analyze and summarize measurement data, identify problems, recommend solutions, and track problem resolutions.
- 3.1.4. The contractor shall submit in writing Project Change Proposals (PCPs) for approval by the Contracting Officer in accordance with MMC-ET-CM01.
- 3.1.5. The contractor will provide management for the MAF Energy Cost Reduction Program to include necessary controls and maintenance. The provisions for this plan are included in Attachment J-7-B of this contract.

- 3.1.6. The contractor will furnish information in accordance with the requirements of the Data Procurement Document (DPD) 660. To ensure that data is provided in the required manner, the contractor will provide the overall management process to include activities required to assure that information is properly controlled, compatible, available and current. The contractor will identify, control, and monitor the preparation of, reproduce, distribute and maintain status of the internal and deliverable documentation for the MAF operations; maintain a data management plan and procedures; and acquire and control data from Government agencies, tenants, subcontractors, and suppliers as required.

3.2 Information Systems

- 3.2.1 The contractor will provide for the operation and maintenance of the Local Area Network (LAN) infrastructure including backbone, switches, and other devices to and including the monument, which is included in Figure 2 of LMC-ET-MA91. This includes all labor, software, training and subcontract support for LAN activities.

3.3 Procurement Management

- 3.3.1 The contractor will develop and implement a Procurement Management System to integrate technical, business and management functions.
- 3.3.2 The contractor shall provide an integrated procurement system to direct and control intra and interdivisional work; subcontractors and suppliers; and coordination and evaluation of procurements.
- 3.3.3 The contractor shall maintain records and submit required reports relating to Small and Small Disadvantaged Business participation in MAF operations and procurements.

3.4 Safety, Reliability and Quality Assurance Management

- 3.4.1 The contractor will investigate accidents/incidents and personnel injuries to determine cause and recommend corrective action to prevent recurrence. This effort includes statistical analysis and records on frequency and severity rates and submittal of reports.

- 3.4.2 The contractor will perform the re-certification of MAF Operations assigned High Pressure Vessels/Systems.
- 3.4.3 The contractor will identify, monitor and control safety and health conditions, in relation to its assigned work areas, to assure compliance with OSHA regulations.

3.5 MSFC Operations Management

- 3.5.1 MSFC Research & Development Center Initiatives - The Contractor shall provide unique skills, maintenance technical expertise, documentation assistance, and equipment (except that to be furnished by the Government) to perform on-site support/coordination for MSFC initiatives in the Productivity Enhancement complex areas of propulsion, science research materials, avionics, space environment, and payload utilization. Inclusive in this support will be the refinement of material processing tasks and related equipment (e.g. non-metals, welding, and metallurgy, TPS spray/molding, and automated applications of insulation), unique technical ADP functions, quality and safety surveillance, hardware analyses/assessments, property control and logistics for contractor activities. The contractor shall procure the tooling material, equipment and software to modify the Horizontal Weld Tool in Bldg. 4707 at MSFC to accommodate Self Reacting Friction Stir Welding Operations as identified in PCP's B81734 and B81734A.
- 3.5.2 On-Site Program Requirements Compliance - The Contractor will provide an onsite capability at the MSFC facility to assure continued compliance with base operations program requirements (e.g. Change Evaluations, Configuration Control Board Directives, and ET Configuration Control Board Agendas and Minutes) and regulations associated with the operations and maintenance of the Project Program functions. The contractor will prepare, coordinate and distribute Project Technical Directives and associated disposition documentation, as well as provide liaison between on-site Contractor and NASA Personnel.

4. SITE OPERATIONS AND MAINTENANCE

The contractor will provide the necessary management, operations and administration resources to assure successful performance of MAF site operations and maintenance. These tasks will be performed in accordance with the details contained in DRD LMC-ET-MA91, entitled "Facilities Operating Plan." These site operations and maintenance tasks are as follows:

4.1 Planning & Control

- 4.1.1 The contractor will provide the necessary planning and controls to include the establishment of command media and management systems and reports necessary to support of External Tank operations and maintenance.
- 4.1.2 The contractor will provide master planning that includes coordination of projects among prime contractor and tenant activities; maintaining Real Property Records for reporting purposes and distributing data to applicable users.
- 4.1.3 The contractor will provide engineering support for various project requirements to include estimating, technical assessments, and support to change proposals.
- 4.1.4 The contractor will identify, schedule, status, receive, inspect, checkout, store and/or account for the Government-Provided Property set forth in Attachment J-4-B.
- 4.1.5 The contractor will maintain Real Property Records for reporting purposes and distributing data to applicable users.
- 4.1.6 The contractor will provide Property Management to include systems control, government interfacing and reporting, maintenance of MAF operations and External Tank (ET) primary property records, and performance of property custodial functions for MAF operations' assigned areas.
- 4.1.7 The contractor shall forecast and provide the annual usage requirements of pressurants and propellants for operations at the MAF. This forecast will be compiled based on projections received from each user, delineated as such, and submitted to the government.

4.2 Equipment Acquisition/Rehabilitation

- 4.2.1 The contractor will provide engineering, administration, and supervision in support of acquiring plant equipment for MAF operations and maintenance to include the development of equipment requirements and specifications, obtaining and evaluating vendor quotes, supervision of equipment performance checkout, and preparation of equipment maintenance requirements. Specific

equipment acquisition by the contractor and the provisions for their installation as required to support production will be authorized by separate contractual action pursuant to Attachment J-1 of Contract NAS8-39243(F), or its successor(s).

- 4.2.2 The contractor will provide engineering, administration, and supervision in support of the rehabilitation, rearrangement/alteration of plant equipment utilized for MAF operations and maintenance based on maintenance records, capability, age and condition. This includes the development of equipment/facilities requirements, specifications and design criteria, vendor/subcontractor selection, rearrangements and alteration design, project management, preparation of work authorization, schedules, and project performance and status. Specific equipment rehabilitation projects required to support production will be authorized by separate contractual action pursuant to Attachment J-2 of Contract NAS8-39243(F), or its successor(s).

4.3 Rearrangement and Alteration (R & A)

- 4.3.1 The contractor will provide labor, materials, equipment, and supplies required for the performance of R & A projects at the MAF. These R & A projects are site related and do not include projects in the assigned areas of prime contractors and tenants. R & A projects are those projects that are estimated at less than \$200,000.
- 4.3.2 The contractor will coordinate with the External Tank project to ensure that R & A projects for site related activities are performed on a non-interference basis.
- 4.3.3 Regarding other R & A projects performed by tenants, prime contractors, and not otherwise included within the scope of this contract, the contractor will maintain close coordination of those projects and ensure that facility configuration and control is maintained.

4.4 Construction of Facilities (CoF)

- 4.4.1 The contractor will be responsible for coordinating the approval, up to the point of project authorization, of CoF projects at MAF to include those projects requested by the External Tank production contractor. Upon receipt of authorization, responsibility for project implementation and funding will be with the requesting party.

- 4.4.1.1 With respect to each site-related CoF project, the contractor will provide Project Management and Engineering support for the construction, modification and upgrade of facilities to include planning, budgeting, scheduling, identification of detail plant layout and feasibility studies, developing design criteria for NASA-approved projects, selection and management of A&E design, Change Control Board activities, 30%/60%/90% and final design reviews and analysis of as-built conditions.
- 4.4.1.2 Specific facility modifications and construction projects required to support site-related operations will be authorized by separate contractual action pursuant to Contract NAS8-39243(F), Attachment J-3 or its successor.

4.5 Maintenance and Operations

- 4.5.1 The contractor will develop a maintenance program for servicing and supplying real property, facilities, and equipment in accordance with the Facilities Operating Plan (LMC-ET-MA91), Appendix A – Maintenance Interface Matrix.
- 4.5.2 This maintenance program will provide the necessary Engineering, Administration, Supervision and Craft Labor for performing preventive, corrective, predictive and alternative maintenance of property and equipment as well as for the operation of plant systems.
- 4.5.3 Maintenance to restore an item or system to an operating condition that exceeds \$25,000 or 15% of the replacement value will require approval of the MAF Resident Manager's Office prior to proceeding.
- 4.5.4 The contract will be equitably adjusted for restoration or capital-type rehabilitation of a worn item of facility, equipment or system to its original condition where the cost exceeds \$25,000.
- 4.5.5 The contractor will operate site-related systems and equipment at MAF to include emergency on-call services and efforts related to utilities management and conservation.
 - 4.5.5.1 Operations consist of the work performed on plant processes, systems and equipment that do not otherwise qualify as maintenance.

4.5.5.2 Each shift will have an operator with a current First Class Operating Engineer's License with other operators having a current Second Class Operating Engineer's License.

4.5.6 The contractor will provide for the operations associated with maintaining the Michoud Port with a full-time harbormaster with primary responsibilities being the routine minor maintenance and repair of assigned vessels, the docking and proper securing in the harbor. Dry-docking services are specifically excluded. Other responsibilities are as outlined in the Facilities Operating Plan (LMC-ET-MA91), Appendix A – Facilities Maintenance Matrix.

4.6 Environmental Management

4.6.1 Multiple state and federal regulations establish regulatory requirements. These regulations apply to MAF, not individual programs at MAF. Therefore, the contractor is responsible for environmental operations at the MAF, to include the impact of other authorized programs as of the date of this contract.

4.6.2 In order to comply with Environmental Laws and Regulations as baselined in the document "NASA/Lockheed Martin Corporation Responsibilities for Environmental Laws Compliance" Document Number MMC-ET-MA89, the contractor will perform the tasks as outlined in paragraph 4.6.1 above. The contract will be equitably adjusted to comply with new, revised, or changed requirements to applicable Environmental Laws and Regulations.

4.6.2.1 The Contractor shall identify to NASA any facility modifications or projects required to comply with new, revised or changed environmental requirements and the contract shall be modified and equitably adjusted to incorporate such facility modifications and/or projects.

4.6.2.2 In the event that projects associated with environmental laws and regulations are not authorized, costs resulting from non-compliance shall be allocable and allowable. Further, non-compliant operations may be discontinued, at the contractor's discretion and after notification to NASA, until satisfactory resolution of the non-compliant condition.

- 4.6.3 The contractor will provide the resources necessary to perform cleanup of environmental spills as a result of Michoud Assembly Facility operations and maintenance.
- 4.6.4 Clean up activities, including those required to correct previously existing conditions, will be performed by separate contractual action under Contract NAS8-39243(F) or its successor contract (s).

4.7 Site Services

- 4.7.1 The contractor will operate and maintain a central Site Transportation Service that includes a motor pool, driver qualification program, vehicle maintenance and the operation and storage of the fuel and fuel oil systems at MAF.
- 4.7.2 The contractor will provide reproduction services to the NASA/MAF, NASA support agencies and the External Tank production contractor. Reproduction services to tenants may be provided as a Supplemental Tenant Service pursuant to Section 1.0, paragraph 1.3.
- 4.7.3 The contractor will provide food services for the MAF to include cafeteria and vending operations as well as provide for gift shop operations.
 - 4.7.3.1 Cafeteria operations will include the operation of dining rooms, kitchens and storerooms necessary to serve MAF; provide on-site catering services; provide a diversified diet; and provide cafeteria service by medically qualified personnel who have gone through a pre-employment examination.
 - 4.7.3.2 The government will provide as Government-Furnished Property, the square footage, equipment, utilities and local and FTS telephone service necessary to conduct cafeteria, vending and gift shop operations.

- 4.7.4 Telecommunications will be provided to the contractor by the government. The contractor will coordinate requirements with NASA and its communications contractor to include telephones, radio systems and data circuits as well as the coordination of the Emergency Preparedness Communications system. Lease and maintenance of dedicated lines for the Mission Support Room will also be government-furnished property.
- 4.7.5 Mail services will be provided Monday through Friday by the contractor for the delivery of mail to and from the Post Office, the airport and the MAF as well as internal mail processing to include deliveries and pickups between the central mailroom and designated drop-offs throughout MAF.
- 4.7.6 The contractor will provide photography services and microfilming for site-related activities.
- 4.7.7 The contractor will acquire, stock, and issue expendable office equipment and supplies that are common usage at the MAF as identified in the "Stationery and Computer Supply Catalog." These supplies will be provided to both NASA, NASA support agencies to the External Tank, and the External Tank production contractor. Specifically excluded are computer supplies, which will be provided to the MAF site operations and maintenance contractor by the External Tank production contractor.
- 4.7.8 The contractor will provide support to the Child Care Center, which is independently operated. This support is limited to utility interface requirements. Other effort will be at the request of the Child Care Center operator under a Supplemental Tenant Services request.
- 4.7.9 Janitorial services will be provided to NASA, NASA agencies in support of ET, the External Tank production contractor and for various areas at MAF not otherwise occupied by a tenant. These services will be provided by the contractor along with the materials and supplies required to accomplish them. Areas requiring janitorial services are more specifically identified in LMC-ET-MA91, the Facilities Operating Plan.

- 4.7.10 The contractor will maintain MAF roads in such a manner as to ensure repairs are made in a timely manner with barricades installed when required. The grounds at the MAF will be maintained on an as frequent basis necessary to ensure that the facility has a clean and neat appearance.
- 4.7.11 The contractor will develop and implement a pest control plan for MAF in order to control unwanted pests and undesirable plant life that is detrimental to the residents at MAF. Trained and certified personnel will supervise pesticide application with chemical selection considering the recommendations of the Louisiana Department of Agriculture and the U. S. Environmental Protection Agency.
- 4.7.12 Refuse collection and disposal services at MAF will be provided by the contractor. This collection and disposal service will be at designated pick-up points and will be performed as necessary to ensure good housekeeping and sanitary conditions.
- 4.7.13 The contractor will provide "box moves" to support office relocations for NASA, NASA agencies supporting ET and the External Tank production contractor at MAF.
- 4.7.14 The contractor will provide medical services to NASA, NASA agencies supporting ET and to Lockheed Martin personnel located at MAF. These services will include preventive medicine services as defined in LMC-ET-MA91, the Facilities Operating Plan and emergency medical treatment. The emergency treatment will be provided to occupants at the MAF and is limited to initial treatment and first aid and if necessary ambulance service to the nearest medical facility.
- 4.7.15 The contractor will provide qualified/cross-trained persons for plant protection functions to include guard services and fire protection required to ensure the protection of personnel and property at and around the MAF. Specific guard posts and daily duty tours, as well as other various duties to be performed are listed in LMC-ET-MA91, the Facilities Operating Plan.

4.8 Minor Revitalization

- 4.8.1 The contractor will perform Minor Revitalization projects that either alter or repair MAF assigned buildings, structures or other real property. These projects have an estimated value of \$200,000 to less than \$500,000.

- 4.8.2 The contractor will ensure that each Minor Revitalization project is technically authorized pursuant to the requirements contained in DRD LMC-ET-MA91 prior to initiating the work.
- 4.8.3 The contractor shall perform the following FY 2001 Minor Revitalization tasks: (1) Repair Cooling Tower, Building 127; and (2) Paint and Rehab Fire Water Tower 302. Implementation of additional Minor Revitalization tasks will be subject to separate contractual action and equitable adjustment.

5. PROGRAM PROVISIONING TASKS

Reserved for future Program Provisioning Tasks

6. INCORPORATION OF PROJECT CHANGE PROPOSALS (PCPs)

- 6.1 The contractor shall submit in writing Project Change Proposals (PCPs) in accordance with MMC-ET-CM01, MAF Site Operations and Maintenance Project Change Management Plan.
- 6.2 The contractor shall implement MSFC approved Project Change Proposals in accordance with the clause of this contract entitled, "Changes - Cost Reimbursement - Alternate V". PCPs approved for performance by the contractor shall be deemed definitized as listed in the latest issue of the "External Tank Configuration Identification Index and Modification Status Report", CM-017-19-2H, incorporated herein by reference.

ATTACHMENT J-1-B (2)
STATEMENT OF WORK
FOR THE MICHOU D ASSEMBLY FACILITY
OPERATIONS & MAINTENANCE
SHUTTLE HARDWARE RELOCATION

1.0 REQUIREMENTS

- 1.1 The contractor will implement the Shuttle Hardware Relocation – Phase I effort as identified in the PCP B81774 (Lockheed Martin Reference 03MO-0060). The Phase I effort will be accomplished to clear and prepare an adequate storage area at MAF to accommodate receipt of Space Shuttle Program (SSP) hardware.

Any related effort not identified in B81774 will be the subject of separate contractual action.

ATTACHMENT J-4-B

GOVERNMENT-FURNISHED PROPERTY, DATA & SERVICES

A. During the performance of this contract the Government will provide, on a no charge basis, the Government-Furnished Property, Data and Services identified in Appendix I to this attachment.

B. The documents enclosed in the Lockheed Martin letter dated October 1, 2000 Reference 00MO-0686 are incorporated herein by reference, thus providing a "by-item" listing for the following GFP categories:

Plant Equipment
Real Property Summary

Additional GFP furnished subsequent to the Reference 00MO-0686 letter will be incorporated herein when added to the appropriate listings above. Under the terms and conditions of Attachment J-4 of NAS8-39243(F) or the successor contract, the Government will provide the physical plant facilities of the Michoud Assembly Facility for use in the performance of this contract. Construction projects will be completed enabling the MAF physical plant facilities to be maintained in a good state of repair. Under Attachment J-3 of NAS8-39243(F) or successor contract, the Government will provide for rehabilitation, as required, of the equipment provided herein.

The documents enclosed in the Lockheed Martin letter dated July 25, 2002 Reference 02M0-0549 are incorporated herein by reference, thus providing a "by item" listing for the following Government-Furnished Property category:

Miscellaneous (GPINV) Items

C. Lockheed Martin Space Systems Company – Michoud Operations interface and coordination of requirements and schedule need dates will be with and through the MSFC ET Project, MAF Resident Office, and USA if applicable.

APPENDIX I TO ATTACHMENT J-4-B
GOVERNMENT-FURNISHED PROPERTY, DATA & SERVICES

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SECTION "C"

COMPUTER/DATA SERVICES

EQUIPMENT AND SERVICES REQUIRED/PROVIDED AND/OR OPERATED BY THE GOVERNMENT

<u>ITEM NO.</u>	<u>NOMENCLATURE</u>	<u>LOCATION</u>	<u>QUANTITY</u>
1.	<u>Mainframe Computing Services:</u> IBM compatible mainframe computing services required to run ET business and technical software applications. This includes processors, mass storage devices, back-up devices, operating systems software, utilities, libraries, common use applications, 24 hr/7 day operations support, offsite backup storage, and other associated software and hardware required for on-line batch processing applications.	MSFC and MAF	See Note
2.	<u>Scientific Computing Services:</u> VAX and Cray scientific or equivalent computing services required for design and analysis of ET hardware. To include processors, mass storage devices, back-up devices, operating system software, utilities, libraries, 24 hr/7day day operations support, offsite backup storage, and other associated software and hardware required for on-line and batch scientific applications.	MSFC and MAF	See Note
3.	<u>Communications Services:</u> a. Inter Center communications services between MAF and MSFC to support items 1 and 2 above to include TCP/IP, SNA connectivity and IBM channel extension. b. Inter Center communications to all other NASA centers. c. World-wide internet connectivity.	MSFC and MAF	See Note

SECTION "C" (Continued)

COMPUTER/DATA SERVICES

EQUIPMENT AND SERVICES REQUIRED/PROVIDED AND/OR OPERATED BY THE GOVERNMENT

<u>ITEM NO.</u>	<u>NOMENCLATURE</u>	<u>LOCATION</u>	<u>QUANTITY</u>
NOTE:	The above services (Line Items 1-3) shall be as established by MOU between the NASA Office of Space Flight Automated Data Processing Consolidated Center and Lockheed Martin (LM Reference 94MO-0805): Lockheed Martin will forecast yearly and 5 year projections of computer utilization, tape usage and disk storage requirements/needs and submit to NASA. NASA shall monitor usage and plan for increases or decreases in use. SHOULD A FAILURE ON THE GOVERNMENT'S PART CAUSE LOSS OF FACTORY PRODUCTION OF MORE THAN 24 HOURS, A CLAIM SHALL BE PROCESSED IN ACCORDANCE WITH "GOVERNMENT PROPERTY CLAUSE".		
4.	<u>ADPE Equipment and Maintenance:</u> a. Office environment desktop computers and associated equipment	MSFC	See Note below

NOTE: All office environment desktop computers and associated equipment that was provided by the NAS8-39243(F) Contract, or its successors, and transferred to NASA/MSFC Information Management System Accountability by DD1149.

SECTION "H"

TELECOMMUNICATIONS

ITEM
NO.

NOMENCLATURE

1. All telecommunications services required to operate the MAF. This includes historically provided telecommunications services such as telephone systems, radio systems, pagers, cell phones, fax machines, data circuits, Emergency Preparedness Communications system, lease and maintenance of dedicated lines for the Mission Support Room, and utilization of the NASA videoconferencing system.

Attachment J-5-B

MAF Operations and Maintenance Fee Plan

Introduction

The MAF Operations and Maintenance portion of this contract is composed of a Target Fee, Cost Incentive Fee, Award Fee, and Fixed Fee structure, which supports the primary goals of the NASA Space Flight Program: fly safely, meet the flight manifest, improve mission supportability and improve the system. This fee plan emphasizes excellence in managerial, schedule subcontract management and cost performance.

1 Award Fee Provisions

- 1.1 Criteria will be established to evaluate the effectiveness of the Contractor in the Management of the MAF Operations and Maintenance – Basic and the MAF Operations and Maintenance – Shuttle Hardware Relocation.
- 1.2 The established criteria will be utilized to measure the Contractor's performance in meeting the objectives of the program, accomplishing quality work, meeting the major milestones on schedule and managing the program in the most efficient manner to meet program objectives. The criteria will be chosen to meet the objectives and yet be broad enough to cover all phases of the program.
- 1.3 Not later than thirty (30) calendar days prior to the start of each evaluation period, the Contractor will be notified by the Contracting Officer of the desired areas of the emphasis, key events, and the evaluation criteria selected for application to the specific evaluation period. Consideration will be given to the Contractor's recommendations; however, it is the Government's responsibility to establish the specific areas of work to be emphasized and the detailed criteria to be used for each evaluation period.
- 1.4 Within ten (10) calendar days subsequent to any evaluation period, the Contractor may provide a written report of accomplishments to the Contracting Officer to support an analysis of the Contractor's performance under the established criteria set forth in Paragraph 1.3 above. Award Fee evaluation shall be accomplished in accordance with the NASA Marshall Work Instruction (MWI) 5116.1 "Evaluation of Contractor Performance under Contracts with Award Fee Provisions."
- 1.5 The total Award Fee Pool and Period apportionment are set forth in Enclosure (1) to this Attachment.

1.6 Evaluation Scale and Adjective Rating

1.6.1 The Award Fee Rating Table in Enclosure (2) includes the adjective ratings as well as a numerical scoring system from 0-100. For this plan, earned award fee dollars are calculated by applying the total numerical score to available dollars for each Award Fee evaluation period. For example, a numerical score of 85 yields 85 percent of available award fee dollars for that period. However, a score of less than 61 will result in a loss of all award fee for that period.

1.7 Provisional Payment of Award Fee

1.7.1 Commencing with the first day of each evaluation period, 80 percent of the available Award Fee for each Award Fee evaluation period will be provisionally paid to the Contractor in equal monthly installments upon receipt of the Contractor's invoices, subject to the limitation set forth in 1.7.2.

1.7.2 Should at any time the contracting officer determine that the contractor will not achieve a level of performance commensurate with the provisional rate, such rate may be reduced. The Contracting Officer shall notify the Contractor, in writing, if it's determined that a reduction is to be made.

1.7.3 All provisional award fee payments will be superseded by the periodic evaluation. If the Fee Determination Officer's (FDO) determination for a period results in earned award fee above that provisionally provided, the Contracting Officer will issue a unilateral modification to recognize such and payment will be made based upon the unilateral modification. If the amount of award fee earned, as determined by the FDO, is less than the sum of the provisional payments for that period, the Contracting Officer will issue a unilateral modification to recognize such and the Contractor will credit the next payment voucher for the amount over-paid.

1.7.4 In the event this contract is terminated prior to a regular scheduled semiannual Award Fee determination, the Award Fee to be paid to the Contractor shall be a pro rata portion of the potential Award Fee.

2 Target/Cost Incentive Fee Provisions for MAF Operations & Maintenance

2.1 The Target/Cost Incentive Fee is based on the Contractor's performance relative to the Target Cost. The Target/Cost Incentive Fee payable under this contract shall be in accordance with the provisions of FAR 52.216-10, subject to the Award Fee gate identified in Paragraph 2.2 herein. The Target Cost and Target Fee are identified in Section B. The contractor will share in cost underrun and overrun to target cost as follows:

2.1.1 Underrun to Target Cost -The cost incentive payable under this contract shall be the Target Fee increased by 25 cents for every dollar that the total allowable cost subject to this incentive is less than the Target Cost.

2.1.2 Overrun to Target Cost - The cost incentive payable under this contract shall be the Target Fee decreased by 50 cents for every dollar that the total allowable cost subject to this incentive exceeds the Target Cost. This arrangement will continue until the Target Fee is exhausted. Fee reductions for overrun will not impact other fees payable under this contract.

2.2 MAF Operations & Maintenance Award Fee Gates

2.2.1 In calculating the amount of Target Fee and Cost Incentive Fee earned, the following Award Fee Gates apply. In this paragraph, Target Fee refers to Target Fee unadjusted for cost underrun performance.

Average Award Fee Score at End of Contract*	Potential to Earn Target Fee	Potential to Earn Cost Incentive Fee
81% to 100%	Yes	Yes, no limit
61% to <81%	Yes	None
<61%	None	None

* Calculation – Total all Award Fee Ratings earned (percentages by period) divided by total number of Award Fee Periods (rounded to the nearest tenth of a percent).

2.2.2 If the score for any individual Award Fee period is less than a rating of 61%, the Contractor will not earn any Award Fee, Target Fee, or Cost Incentive Fee for that evaluation period.

2.2.2.1 The amount of Target Fee forfeited will be calculated as follows:

Target Fee forfeited equals Contract Value for the six-month evaluation period times Target Fee Percentage earned at complete

Period Contract Value equals period actual cost divided by (100% minus Percent Underrun or 100% plus Percent Overrun achieved at the end of contract)

Target Fee Percentage equals Target Fee earned at complete (adjusted only for Overrun share, if applicable) divided by Target Cost

Example #1: (If actual performance at or below Target Cost)

Assumes:

Period Actual Cost = \$22.5M

Target Cost at Complete = \$200M

Actual Cost at Complete = \$180M

Target Fee = \$4M

Target Fee Percentage = 2%

Calculation:

Underrun Percent at Complete = 10%

$((\$200M - \$180M) / \$200M)$

Period Contract Value = \$25M

$(\$22.5M / (100\% - 10\%))$

Target Fee forfeited = \$25M x 2% = \$0.5M

Target Fee earned = \$4M - \$0.5M = \$3.5M

Example #2: (If Overrun performance)

Assumes:

Period Actual Cost = \$22.5M
Target Cost at Complete = \$200M
Actual Cost at Complete = \$202M
Target Fee = \$4M
Overrun Shareline = 50/50

Calculation:

Overrun Percent = $((\$202M - \$200M) / \$200M) = 1\%$
Period Contract Value = \$22.277M
 $(\$22.5M / (100\% + 1\%))$
Target Fee adjusted for Overrun = \$3M
 $(\$4M - (\$2M \times 0.5))$
Target Fee % adjusted for Overrun = 1.5%
 $(\$3M / \$200M)$
Target Fee forfeited = \$0.334M
 $(\$22.277M \times 1.5\%)$
Target Fee earned (adjusted for overrun/forfeit)
 $(\$3M - \$0.334M) = \$2.666M$

2.2.2.2 The amount of Cost Incentive Fee forfeited will be calculated as follows:

$[(\text{Period Contract Value} - \text{Period Actual Cost}) \times \$0.25]$ equals Period Cost Incentive Fee forfeited

Period Contract Value equals period actual cost divided by $(100\% - \text{Percent Underrun achieved at the end of contract})$

Example Cost Incentive Fee Calculation:

Assumes:

Period Actual Cost = \$22.5M
Target Cost at Complete = \$200M
Actual Cost at Complete = \$180M
Underrun Shareline = 75/25

Calculation:

Underrun Percent at Complete = 10%
 $((\$200M - \$180M) / \$200M)$
Period Contract Value = \$25M
 $(\$22.5M / (100\% - 10\%))$
Period Underrun = \$25M - \$22.5M = \$2.5M
Period Cost Incentive Fee forfeited
 $(\$2.5M \times \$0.25) = \$0.625M$
Cost Incentive Fee Earned at Complete
 $(\$200M - \$180M) \times \$0.25 - \$0.625M = \$4.375M$

3 Fixed Fee

The total fixed fee of \$194,844 for MAF Operations and Maintenance shall be payable upon the execution of this contract. This fixed fee is for the period of performance of September 27, 1999 through September 30, 2000.

4 Performance Incentive Fee (PIF) for Shuttle Hardware Relocation

4.1 The Contractor shall earn and be paid \$16,241 for the clearing of areas within Building 303, Bays 2, 3, and 4 and the east end of Building 103 South Mezzanine to provide additional square feet of storage for shuttle hardware relocation on or before August 4, 2003 subject to ET Project Office determination the performance was achieved by this date. The PIF criteria are excluded from award fee evaluation.

Objective	Amount Apportioned	Earned Amount
Clear Areas within Buildings 103 and 303	\$16,241	

MAF Operations & Maintenance Award Fee Pools				
Period	Previous Amount Apportioned	Increase/ Decrease	New Apportionment	Mod #
October 1, 2000 - March 31, 2001	\$ 345,327	\$ -0-	\$ -0-	022
April 1, 2001 - September 30, 2001	\$ 485,448	\$ -0-	\$ -0-	038
October 1, 2001 - March 31, 2002	\$ 658,718	\$ -0-	\$ -0-	052
April 1, 2002 - September 30, 2002	\$ 761,736	\$ -0-	\$ -0-	068
October 1, 2002 - March 31, 2003	\$ 953,659	\$ -0-	\$ 953,659	
April 1, 2003 - September 30, 2003	\$ 935,851	\$ 1,005	\$ 936,856	
October 1, 2003 - March 31, 2004	\$ 941,537	\$ -0-	\$ 941,537	
April 1, 2004 - September 30, 2004	\$ 983,194	\$ -0-	\$ 983,194	
October 1, 2004 - March 31, 2005	\$ 996,592	\$ -0-	\$ 996,592	
April 1, 2005 - September 30, 2005	\$ 1,027,255	\$ -0-	\$ 1,027,255	
October 1, 2005 - March 31, 2006	\$ 1,051,181	\$ -0-	\$ 1,051,181	
April 1, 2006 - September 30, 2006	\$ 1,081,090	\$ -0-	\$ 1,081,090	
October 1, 2006 - March 31, 2007	\$ 836,416	\$ -0-	\$ 836,416	
April 1, 2007 - September 30, 2007	\$ 849,155	\$ -0-	\$ 849,155	
October 1, 2007 - March 31, 2008	\$ 861,640	\$ -0-	\$ 861,640	
April 1, 2008 - December 01, 2008	\$ 1,180,318	\$ -0-	\$ 1,180,318	
Total	\$ 13,949,117	\$ 1,005	\$ 11,698,893	

Attachment J-6-B is deleted in its entirety per SA 064